

# Original Article

## Hysteroscopic Myomectomy with Monopolar Resectoscope. Description of a technique with the creation of a Flap.

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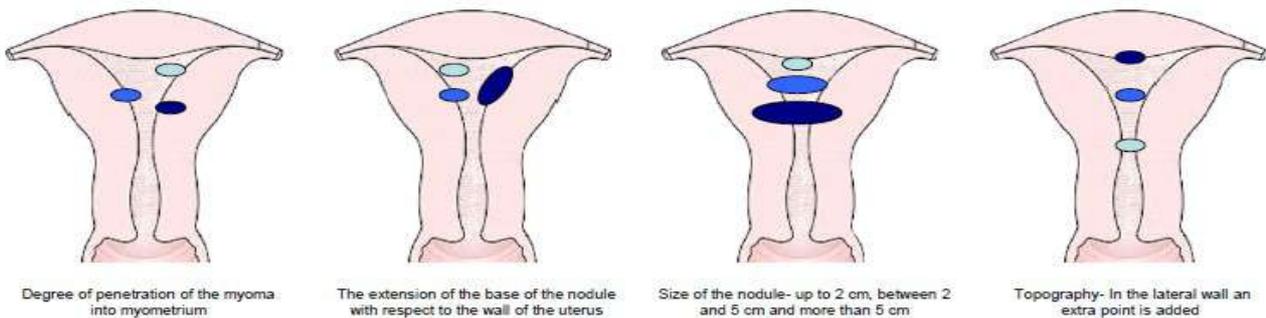
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Despite the development of new hysteroscopic instruments that facilitate myomectomy, in several countries monopolar resectoscopy remains the most used technique. The Flap Technique is presented as an option that reduces the risks of complications. With this technique, the amount of glycine used is reduced, and therefore reduces the risk of water intoxication, reduces the risk of uterine perforation, surgical time and additionally preserves the pseudocapsule.

### Introduction

Hysteroscopic myomectomy is a minimally invasive and the standard of care procedure in patients with submucous myomas. There are several techniques described in the literature and vary according to available technology and surgeons preference (1-4). Unfortunately, hysteroscopic myomectomy is not often performed specially in developing countries with financial restrains with limited access to newer technology. Therefore, monopolar resectoscopy continues to be the most used technique despite the development of new technologies.

It has been reported that resectoscopic myomectomy improves abnormal uterine bleeding in 90% of cases and improves fertility (53-70%) (5-11). Hysteroscopic procedures are associated with a low incidence of adverse events, 0.28% in the Netherlands (12) and 0.24% in Germany (13). However, myomectomy and metroplasty are the procedures with the highest rate of complications, with rates as high as 10% (14).



Degree of penetration of the myoma into myometrium

The extension of the base of the nodule with respect to the wall of the uterus

Size of the nodule- up to 2 cm, between 2 and 5 cm and more than 5 cm

Topography- In the lateral wall an extra point is added

### STEP-W classification

- = Score 0
- = Score 1
- = Score 2

	Size (cm)	Topography	Extension of the base	Penetration	Lateral Wall	Total
0	< 2	Low	< 1/3	0	+1	
1	2 to 5	Middle	1/3 to 2/3	< 50%		
2	>5	Upper	> 2/3	>50%		

Score	Group	Complexity and Therapeutic options
0 to 4	I	Low complexity hysteroscopic myomectomy
5 to 6	II	High complexity hysteroscopic myomectomy. Consider GnRH use. Consider Two-step hysteroscopic myomectomy.
7 to 9	III	Consider alternatives to the hysteroscopic technique

Several techniques of myomectomy have been described, including traditional management in the operating room with single or bipolar resectoscopy, or use of a morcellator and office techniques with no extraction or myolysis (15,16). The technique of hysteroscopic myomectomy begins with adequate patient selection considering size, number and location of myomas, factors that determine the difficulty of the procedure (17,18). To facilitate decision-making in these cases, in 2005 Lasmar presented a classification using objective parameters to assess the feasibility of extraction of fibroids by hysteroscopy (19).

Lesions that are completely in the endometrial cavity type 0 and type 1 can be vaporized and / or resected; However, for those larger lesions or penetrating the myometrium at a certain degree of depth type 1 and 2, careful planning and greater expertise is needed. That is why to perform a technique to reduce surgical time, decrease the amount of glycine needed and to avoid to introduce the resectoscope up to the fundus of the myoma could decrease the risk of complications and make resection of larger and deep fibroids feasible.



Image 1: Grabbing the cervix

### Description of the Technique

The procedure is initiated in the operating room with grabbing the anterior lip of the cervix with 2 single tooth tenaculum, placed at 11 and 1 hours (image 1), taking a good amount of tissue, which decreases cervical lacerations. A diagnostic hysteroscopy is performed, followed by dilation of the cervix and 10-mm resectoscope passage with glycine infusion; Resection is initiated in the central part of the myoma, the most protruded, thinning the body of the myoma and leaving the most prominent ends in the shape of a U, (Image 2) With the cuts prepare the borders in the form of long flaps allow easy grasping of the myoma; In the case of very deep fibroids an external resection of the endometrium around the fibroid may be done to thin the endometrium by better preparing the flap and facilitating its removal (Figure 1).



Image 2: Resection is initiated in the central part of the myoma, the most protruded, thinning the body of the myoma and leaving the most prominent ends in the shape of a U

The hysteroscope is removed and a small ring forceps is introduced (Note: never use forceps with teeth), one of the myoma flaps is grabbed, making use of spatial memory; Then with a slow rotation and sustained and gradual traction, the myoma is enucleated and extracted completely. (Image 3). When inspecting the extracted tissue, it is easy to recognize the intramyometrial surface of the myoma, which ensures complete extraction, since this surface is smooth and shiny, "sign of the bright surface" (Image 4). Once the myoma is removed, the hysteroscope is introduced again, the endometrial cavity is inspected, the base of insertion is identified, and bleeding vessels are coagulated, trying to preserve the integrity of the pseudocapsule. (Image 5)

## Discussion:

The approach of myomas especially the larger ones and the type 2 of the Figo classification, through hysteroscopic route represents a challenge for the gynecologist. The success of the treatment is in adequate patient selection. The use of GnRh analogs prior to surgery reduces the size of the myoma and its vascularization, decreasing bleeding and the risk of absorption of the distension media, but increases the risk of perforation due to thinning of the uterus and there is loss of differentiation of the texture and myoma - myometrium consistency and in addition there seems to be loss of response to misoprostol for the preparation of the cervix when it is used (18,20).

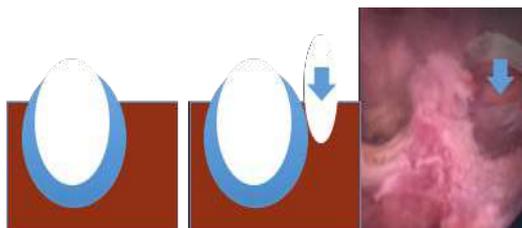


Fig 1. Preparing the flap

Hysteroscopic myomectomy is effective for the treatment of HUA and infertility (5-10). This surgical procedure produces less pain, rapid recovery, and immediate improvement in quality of life (21). In most cases it is possible to do it in a single procedure, and the possibility of recurrence is lower (22). In surgical counseling, this therapeutic option should always be offered, since is less invasive, has shorter hospital stay, lower costs, lower adhesion formation and good clinical response (23).

Despite the limitations of hysteroscopic resection of large type 2 fibroids, due to the high risk of complications (2,22), the combination of resectoscopy and myoma enucleation allow the resection of large tumors with decreased surgical time, lower amount of glycine and, therefore, lower risk of water intoxication and uterine perforation (23).



Image 3: Myoma flap is grabbed



Image 4: "Sign of the bright surface"



Image 5: The base is identified

## Conclusion

This technique combines the use of resectoscopy with myoma enucleation as a possible alternative for the resection of submucous myomas, especially useful in large fibroids. As it is a procedure with a blind step, it may not be of general acceptance, but with delicate maneuvers and adequate training complications are minimal. Despite several years of use of this technique in our service, without major adverse events, to achieve general acceptance, prospective studies are required that compare the suggested parameters and determine the safety, reproducibility and effectiveness of the proposed technique.

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